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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,386	11/25/2003	Chae Min Ju	HI-0176	4278

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EXAMINER	
GUPTA, PARUL H	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,386	JU ET AL.	
	Examiner	Art Unit	
	Parul Gupta	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 are pending for examination as interpreted by the examiner. The IDS filed on 11/25/03 and 8/26/05 were considered.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9 and 11-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheong et al., US Patent 7,038,977.

Regarding claim 1, Cheong et al. discloses a slim-type optical pick-up actuator (shown in figure 6) comprising: a lens holder (element 120) having an object lens (element 110) for condensing a light on an optical disc, mounted at one side thereof, wherein the lens holder is configured to move in focusing and tracking directions (shown in figure 4D); a base (130) having a plurality of first support members (elements 131 and 133 of figure 7), each having a magnet (136 and 137) attached thereto, wherein the magnets face each other; and a driving member having a focusing coil (134) and at least one tracking coil (135) directly attached to the focusing coil in series in the tracking direction; wherein the lens holder comprises a second support member (shown clearly to which element 125 is attached as surrounding element 115 in figure 6) extending therefrom configured to support the driving member between the magnets, and wherein the driving member activates the lens holder by an electromagnetic force with the magnets in focusing and tracking directions (see abstract).

Regarding claim 2, Cheong et al. discloses the slim-type optical pick-up actuator of claim 1, wherein the second support member is integrally formed with the lens holder (shown in figure 6).

Regarding claim 3, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 1, wherein the focusing coil (134) is installed to face a central portion of the magnets (136 and 137), and two tracking coils (135) are installed to respectively face left and right sides of the magnets.

Regarding claim 4, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 1, wherein the second support member has a focusing coil support boss (125) formed at a position facing with a central portion of the magnet to dispose a horizontally wound focusing coil (134), and the lens holder (210) has a coil seat groove (115) formed at both sides of the focusing coil support boss to dispose a vertically wound tracking coil (135).

Regarding claim 5, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 1, wherein the focusing coil (134) is installed to respectively face at least one of the left and right sides of the magnets (136 and 137), and two tracking coils (135) are installed to respectively face the central portion of each of the magnets.

Regarding claim 6, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 1, wherein the second support member has first and second tracking coil support bosses (125) respectively facing central portions of each of the magnets (136 and 137) that each support one vertically wound tracking coil (135), and wherein the second support member has focusing coil support bosses (125)

respectively facing with left and right sides of the magnets that each support one horizontally wound focusing coil (134).

Regarding claim 7, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 1, wherein the second support member has at least one coil support boss (125) facing with the central portion of the magnet to support one of a wound focusing coil and tracking coil, and has a coil seat portion (115) formed at sides of the coil support boss to support the other wound coil, and wherein each of the magnets (136 and 137) has a single polarity (figure 7).

Regarding claim 8, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 7, wherein the coil support boss (125) supports a horizontally wound focusing coil (134) and the coil seat portion (115) is a groove to support a vertically wound tracking coil (135).

Regarding claim 9, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 7, wherein the coil support boss supports a vertically wound tracking coil (135) and the coil seat portion (115) is a groove to support the horizontally wound focusing coil (134).

Regarding claim 11, Cheong et al. discloses in figure 5 an optical pick-up actuator comprising: a base (103) that includes a magnetic support unit having a plurality of magnets facing each other (136 and 137); a lens holder (120) configured to be driven in tracking and focusing directions (shown in figure 4D) that includes an object lens (110) mounted at a first side portion (left) thereof and a magnetic driving unit (coils

of elements 134 and 135) mounted at a second side portion (right) thereof positioned between the magnets, wherein a mass center position of the lens holder is substantially coincident with a force center position of the magnetic driving unit (column 2, lines 60-64).

Regarding claim 12, Cheong et al. discloses in figure 6 the actuator of claim 11, wherein the magnetic driving unit comprises coils wound in directions different from one another (shown more clearly in figure 7) and fixedly attached together.

Regarding claim 13, Cheong et al. discloses in figure 6 the actuator of claim 12, wherein the coils of the magnetic driving unit comprises: a focusing coil (134) configured to face a central portion of the plurality of magnets (136 and 137) and being horizontally wound in a rectangular shape; and first and second tracking coils (135) configured to face left and right sides of the magnets and directly attached to a lateral surface of the focusing coil (shown more clearly in figure 7).

Regarding claim 14, Cheong et al. discloses in figure 6 the actuator of claim 12, wherein the coils of the magnetic driving unit comprises: a tracking coil (135) vertically wound to have a rectangular type (column 5, lines 30-35) facing with the central portion of the magnets (136 and 137); and first and second focusing coils (both shown as part of element 134) facing with the left and right sides of the magnets and directly attached to a lateral surface of the tracking coil (shown more clearly in figure 7).

Regarding claim 15, Cheong et al. discloses the actuator of claim 11, wherein the magnet of the magnetic support unit has a single polarity (shown in figure 7).

Regarding claim 16, Cheong et al. discloses the actuator of claim 11, wherein the force center position of the magnetic driving unit includes a force center position of the focusing coil and a force center position of the tracking coil that are each substantially coincident with the mass center position of the lens holder (column 2, lines 60-64).

Regarding claim 17, Cheong et al. discloses in figure 6 the actuator of claim 11, comprising a pair of wire suspensions (140) connected at a first end to the lens holder (120) and at a second end to a frame (103) to support the lens holder with a prescribed degree of freedom.

Regarding claim 18, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator, comprising: single magnets (136 and 137) fixed to face one another having a magnetic field area therebetween; a lens holder (120) having an object lens (110) mounted at one side thereof for activation, and having tracking (135) and focusing coils (134) symmetrically installed directly connected to each other in the magnetic field area of the magnets; a frame (103) for supporting the lens holder; and a plurality of wire suspensions (140) for flexibly attaching the frame to the lens holder.

Regarding claim 19, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 18, wherein the lens holder (120) comprises: first and second housing grooves (portions of element 115) each having one single magnet positioned therein; and a coil supporter (125) formed in a Y-axis direction such that the focusing and tracking coils are seated between the first and second housing grooves.

Regarding claim 20, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 19, wherein the coils comprises: a focusing coil (134) positioned at

a central portion between the magnets (136 and 137) and having a horizontally wound surface facing the magnets; and left/right-side tracking coils (135) positioned at left/right sides of the magnets and having a vertically wound surface facing two of the magnets.

Regarding claim 21, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 20, wherein the coil supporter (125) has a focusing coil support boss having the focusing coil (134) fixed thereto, and has a tracking coil seat groove (115) at a lower level between the focusing coil support boss and an internal lateral surface of the lens holder (120).

Regarding claim 22, Cheong et al. discloses in figure 6 the slim-type optical pick-up actuator of claim 19, wherein the focusing coil (134) is disposed at left and right sides of the coil supporter (125) to face left and right sides of the magnets, and the tracking coil (135) is disposed vertically on a center of the coil supporter to face the center of the magnets.

Regarding claim 23, Cheong et al. discloses a method of forming a optical pick-up actuator, comprising: providing a lens holder having an actuation area therein (column 4, lines 35-47); winding focusing and tracking coils (column 4, lines 58-67); directly attaching at least one tracking coil to at least one focusing coil to form a driving unit extending along a tracking direction of the lens holder (column 5, lines 25-28); coupling an object lens to a first side of the lens holder (column 4, lines 35-37); coupling the driving unit ("magnetic driving portion") to a second side of the lens holder (column 4, lines 37-45); and flexibly attaching the lens holder to a frame so that the driving unit is supported completely in the actuation area (column 4, lines 44-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheong et al. in view of Yamamoto, US Patent 5,103,344.

Cheong et al. discloses the slim-type optical pick-up actuator of claim 1, but does not disclose the further limitation of claim 10 that the coils are fixed by epoxy.

Yamamoto discloses an actuator wherein the focusing coil and the tracking coil disposed on the second support member are fixed by epoxy (column 4, lines 46-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of fixed by epoxy as taught by Yamamoto into the system of Cheong et al. The motivation being accurate movement caused by the force generated by the current through the coils.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The given references disclose similar actuators and driving members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260.

The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
7/20/06

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER